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What is claimed is:

1. A polynucleotide comprising a first promoter derived from a gene encoding a co-stimulatory molecule and a first sequence encoding at least one antigen wherein said first sequence is operably linked to said first promoter.

2. The polynucleotide of claim 1, wherein the promoter is derived from a CD80 (B7-1) gene.

3. The polynucleotide of claim 1, wherein the promoter is derived from a CD86 (B7-2) gene.

4. The polynucleotide of claim 1, further comprising a second sequence encoding at least one cytokine operably linked to the first promoter.

5. The polynucleotide of claim 4, wherein the cytokine is selected from the group consisting of CD40 ligand (CD40L), tumor-necrosis factor-related activation-induced cytokine (TRANCE) and Flt3 ligand.

6. The polynucleotide of claim 1, further comprising a second sequence encoding at least one cytokine and a second promoter, wherein the second sequence is operably linked to the second promoter.

7. The polynucleotide of claim 6, wherein said second promoter is a constitutive promoter.

8. The polynucleotide of claim 6, wherein the cytokine is selected from the group consisting of CD40 ligand (CD40L), tumor-necrosis factor-related activation-induced cytokine (TRANCE) and Flt3 ligand.

9. A core carrier coated with a polynucleotide according to claim 1.

10. The carrier of claim 9, wherein the carrier is comprised of gold.

11. A pharmaceutical composition, comprising a polynucleotide according to claim 1 and a pharmaceutically acceptable excipient.

12. The pharmaceutical composition of claim 11, further comprising a cytokine.

13. The pharmaceutical composition of claim 12, wherein the cytokine is selected from the group consisting of CD40L, tumor-necrosis factor-related activation-induced cytokine (TRANCE) and Flt3 ligand.

14. A method for eliciting an immune response in a vertebrate subject, said method comprising:

(a) providing a nucleotide sequence encoding an antigen operably linked to a promoter derived from a gene encoding a co-stimulatory molecule, said promoter capable of directing the expression of said antigen in the subject; and

(b) administering the nucleotide sequence to the subject, whereby the antigen is expressed in an amount sufficient to elicit an immune response.

15. The method of claim 14, wherein the co-simulatory molecule is CD80 or CD86.

16. The method of claim 14, further comprising the step of administering at least one cytokine to the subject.

17. The method of claim 16, wherein the cytokine is administered as a polynucleotide encoding the at least one cytokine.

18. The method of claim 16, wherein the cytokine is administered as a protein.

19. The method of claim 16, wherein the cytokine is selected from the group consisting of CD40L, tumor-necrosis factor-related activation-induced cytokine (TRANCE) and Flt3 ligand (flt-3L).

20. A method for eliciting an immune response in a vertebrate subject, said method comprising:

(a) providing a core carrier particle coated with a nucleotide sequence encoding at least one antigen, said nucleotide sequence operably linked to a promoter derived from a gene encoding a co-stimulatory factor, wherein said promoter is capable of driving expression of the antigen-encoding sequence in the subject; and

(b) administering the coated particle to the subject using a particle-mediated transdermal delivery technique, whereby the antigen is expressed in an amount sufficient to elicit an immune response.

21. The method of claim 20 wherein the core carrier particle is a gold particle.

22. The method of claim 20, wherein the nucleotide sequence further comprises a sequence encoding a cytokine selected from the group consisting of TRANCE, CD40L and flt-3L.

23. The method of claim 20, further comprising administering to the subject a cytokine selected from the group consisting of TRANCE, CD40L and flt-3L.

24. The method of claim 20, wherein step (b) is repeated to provide a prime and a booster administration.

25. The method of claim 24, wherein the core carrier particle is a gold particle.

26. A vaccine composition comprising:

(a) an expression vector comprising a polynucleotide encoding at least one antigen; and

(b) at least one cytokine selected from the group consisting of CD40 ligand (CD40L), tumor-necrosis factor-related activation-induced cytokine (TRANCE) and Flt3 ligand (flt-3L).

27. A vaccine composition comprising:

(a) at least one peptide antigen; and

(b) an expression vector comprising a polynucleotide encoding at least one cytokine selected from the group consisting of CD40 ligand (CD40L), tumor-necrosis factor-related activation-induced cytokine (TRANCE) and Flt3 ligand (flt-3L).

28. A vaccine composition comprising:

(a) at least one peptide antigen; and

(b) at least one cytokine selected from the group consisting of CD40 ligand (CD40L), tumor-necrosis factor-related activation-induced cytokine (TRANCE) and Flt3 ligand (flt-3L).

29. The vaccine composition according to claim 26, wherein the polynucleotide and/or the at least one cytokine is coated onto a core carrier.

30. The vaccine composition according to claim 27, wherein the polynucleotide and/or the at least one peptide antigen is coated onto a core carrier.

31. The vaccine composition according to claim 28, wherein the at least one peptide antigen and/or the at least one cytokine is coated onto a core carrier.

32. A method for eliciting an immune response in a vertebrate subject, said method comprising:

(a) providing a vaccine composition according to claim 26; and

(b) administering the composition to the subject, whereby the antigen is expressed in an amount sufficient to elicit an immune response.

33. A method for eliciting an immune response in a vertebrate subject, said method comprising:

(a) providing a vaccine composition according to claim 27; and

(b) administering the composition to the subject in an amount sufficient to elicit an immune response.

34. A method for eliciting an immune response in a vertebrate subject, said method comprising:

(a) providing a vaccine composition according to claim 28; and

(b) administering the composition to the subject in an amount sufficient to elicit an immune response.

35. A method for eliciting an immune response in a vertebrate subject, said method comprising:

(a) providing a vaccine composition according to claim 29; and

(b) administering the composition of step (a) to the subject using a particle-mediated delivery technique.

36. The method of claim 35, wherein the core carrier is a gold particle.

37. The method of claim 35, wherein step (b) is repeated to provide a prime and a booster administration.

38. A method for eliciting an immune response in a vertebrate subject, said method comprising:

(a) providing a vaccine composition according to claim 30; and

(b) administering the composition of step (a) to the subject using a particle-mediated delivery technique.

39. The method of claim 38, wherein step (b) is repeated to provide a prime and a booster administration.

40. A method for eliciting an immune response in a vertebrate subject, said method comprising:

(a) providing a vaccine composition according to claim 31; and

(b) administering the composition of step (a) to the subject using a particle-mediated delivery technique.

41. The method of claim 40, wherein step (b) is repeated to provide a prime and a booster administration.